REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-21 are pending. Claims 19-21 have been presently amended.

In the Official Action, Claims 19-21 were rejected under 35 U.S.C. § 101; Claims 1, 5-8, 10-14, 16-18, 20, and 21 were rejected under 35 U.S.C. § 102(b) as being anticipated by Matsumoto et al. (U.S. Patent No. 6,647,125); and Claims 2-4, 9, 15 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsumoto in view of Nakajima (U.S. Patent No. 6,650,437).

Regarding the 35 U.S.C. § 101 rejection, Claims 19-21 are amended in response to the rejection under 35 U.S.C. § 101 to define statutory subject matter and are amended as suggested in the Office Action. Thus, this rejection has been overcome.

Claim Summary: Claim 1 as previously presented is directed to an image processing apparatus, comprising:

> a communication unit configured to exchange data with an external device;

> an attribute determination unit that determines an image attribute of a first image signal *on a pixel by pixel basis* to generate an attribute signal indicating the image attribute;

> an embedding unit that embeds the attribute signal in the first image signal in a predetermined format to obtain a second image signal; and

> a storage unit that stores the attribute signal and one of the first image signal and the second image signal, wherein

> the second image signal is transmitted to the external device through the communication unit. [Emphasis Added.]

8

Accordingly, in Claim 1, the image attribute includes image area attributes determined by units of pixel by pixel. Such illustrative image attribute examples determined by units of pixel by pixel could include:

1) a character identification signal indicating a character area,

2) a dot identification signal indicating a dot area, and

3) a continuous-tone identification signal indicating a continuous tone area.[1]

Regarding the art rejections, the outstanding Office Action applied Matsumoto et al for an asserted teaching of an attribute determination unit that determines an image attribute of a first image signal on a pixel by pixel basis to generate an attribute signal indicating the image attribute. See Office Action, page 6, line 17, to page 7, line 5. The Office Action then quotes sections of Matsumoto et al in support for this view. Those sections quoted include column 3, lines 1-12, and column 5, lines 53-61.

Yet, it unclear where in those sections that a pixel by pixel basis determination of an image attribute is taught. Those sections quoted from Matsumoto et al are reproduced below along with additional passages from column 5.

Column 3, lines 1-12:

As shown in FIG. 2, each image file (20) contains following components:

(a) first attribute information (21)

Summary information of the object image, including the format ID, title, producer, keyword, comment, final owner, revision number (number of times of savings of the object), total editing time, date and time of final print, date and time of original preparation, date and time of final storage, thumbnail attribute, and application used for preparation . . .

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[1] This list is non-limiting and non-exhaustive. This list is provided for the examiner's benefit in understanding this feature.

Column 5, lines 44-61:

As shown in FIG. 5, the image of each resolution layer is divided into tiles each consisting of M×N pixels. When the image is divided into the tiles of M×N pixels starting from the upper left corner, a blank portion may be generated in a part of the tiles at the right-hand end and/or at the lower end (indicated by a hatched area).

In such case the tile of M×N pixels is completed by inserting the pixel at the right-hand end or at the lower end repeatedly.

The image of each tile is memorized in a data format of JPEG compression, single color or non compression. The JPEG compression is an image compressing method of international standard defined by ISO/IEC JTC1/SC29. The single color is a data format, in case an entire tile is substantially composed of a single color, of representing the color of the tile by a single color instead of memorizing the individual pixel values. This data format is effective particularly for an image generated by computer graphics.

The *image data* divided into the tile as explained in the foregoing *are stored in the sub image data file, and the total number of tiles, the size of each tile, the data start position, the data format etc. are stored in the sub image header*. [Emphasis Added.]

There is no disclosure in the column 3 section of Matsumoto et al for pixel-by-pixel processing. As to be discussed in more detail below, the description in the column 5 section of Matsumoto et al details that the image of each resolution layer is divided into tiles each consisting of M×N pixels, details that the image of **each tile** is memorized in a data format of JPEG compression, single color or non compression, and details that the image data (of each tile containing the M×N pixels) are stored along with **characteristic information of the tiles** (i.e., total number of tiles, the size of each tile, the data start position, the data format etc.).

The examiner's consideration of the following sections of Matsumoto et al is invited.

According to Matsumoto et al, the attribute information indicates the characteristics of the image as a whole. For example, Matsumoto et al describe in column 8, lines 33-44:

A step S520 effects enciphering on the extracted watermark information, and such enciphering can be achieved in various methods, such as a known conversion utilizing a random number table. Also the present invention is not limited by the enciphering method.

A step S530 converts the enciphered watermark information, together with the pixels, into pattern data.

A step S540 utilizes the obtained image data of the watermark information for mutual calculation with the image data of the object image in the real image space, thereby embedding the watermark information in the object image.

Thus, in <u>Matsumoto et al</u>, the watermark information embedded in the pixels never indicates the characteristics of the pixel, but rather it is a part of the enciphered information which represents the characteristics of the image as a whole.

The Office Action asserts, at page 3, beginning with line 7 from the bottom of the outstanding Office Action, that <u>Matsumoto et al</u> disclose that the image of each tile is memorized in a data format of JPEG compression, and refers specifically to column 5, lines 53-61. <u>Matsumoto et al</u> describe as follows in column 5, lines 53-61:

> The image of each tile is memorized in a data format of JPEG compression, single color or non compression. The JPEG compression is an image compressing method of international standard defined by *ISO/IEC JTCI/SC29*. The single color is a data format, in case an entire tile is substantially composed of a single color, of representing the color of the tile by a single color instead of memorizing the individual pixel values. This data format is effective particularly for an image generated by computer graphics.

<u>Matsumoto et al</u> also describe as follows in column 7, line 55 - column 8, line 1:

> A step S320 detects the attribute of the image of each of the divided tiles. For example a tile containing a character or a fine line is defined as a character/fine line tile; a tile containing *relatively important information such as a human face is defined as an important tile*; a tile of which all pixels are of same data (or if only a very limited number of pixels is different in value) is defined as a single color tile; and any other tile is defined as a halftone tile.
> A step S330 determines the data format of the tile according to the detected attribute. For example, the character/fine line tile and the important tile mentioned above are determined as the *non-compression of the attribute 1*, the halftone tile is determined as the JPEG compression of the attribute 2, and the single color tile is determined as the single color of the attribute 3. [Emphasis added.]

Thus, the examiner will appreciate that the aforementioned attributes are tile attributes, which are not attributes that indicate the characteristics on a pixel-by-pixel basis.

11

For example, in <u>Matsumoto et al</u>, when the stored data is read out, if the tile is stored in a single color mode, all the pixels that belong to the tile can be said to be pixels in a single color area, on the other hand, even if the tile is stored in non-single color mode, some pixels belonging to the non-single color mode contain pixels of single color area.

When the stored data is read out, even if the tile is stored in a non-compression mode, the tile inevitably includes pixels of a single color area and a half-tone other than characters, fine lines, and faces. Applicants submit that this does not mean the image contains attribute information on a pixel by pixel basis.

Thus, if <u>Matsumoto et al</u> teach the determination of an attribute of an image signal, it is a determination of an attribute for a collection of many pixels (i.e., a determination of an attribute of the tile) and is **not** a determination of an attribute on a pixel by pixel basis, as claimed.

Accordingly, <u>Matsumoto et al</u> do not disclose or suggest a determination of an image attribute of a first image signal *on a pixel by pixel basis* to generate an attribute signal indicating the image attribute, as defined in independent Claims 1, 14, and 18.

M.P.E.P. § 2131 requires for anticipation that each and every feature of the claimed invention must be shown in as complete detail as is contained in the claim.

Accordingly, with the above-noted feature of the determination of an image attribute of a first image signal on a pixel by pixel basis not in the applied art, independent Claims 1, 14, and 18 (and the claims dependent therefrom) are believed to patentably define over the art of record.

Entry of amendment: This amendment is submitted in accordance with 37 C.F.R. §1.116 which after final rejection permits entering of amendments canceling claims, complying with any requirement of form expressly set forth in a previous Office Action,

presenting rejected claims in better form for consideration on appeal, or presenting amendments touching on the merits upon a showing of good and sufficient reasons why the amendment is necessary and was not presented earlier. The present amendment addresses a formality associated with the preambles in dependent Claims 19-21. The arguments as given above indicate that the pending claims are in a condition for allowance. No new matter has been added, and this amendment does not raise new issues requiring further consideration and/or search. It is therefore respectfully requested that the present amendment be entered under 37 C.F.R. §1.116.

Conclusion, in view of the present amendment and in light of the previous discussion, Applicants respectfully submit that the present application is in condition for allowance and respectfully request an early and favorable action to that effect.

Respectfully submitted,

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13